

28 June 1984

MEMORANDUM FOR: CSD/OC

SUBJECT : Revisions/Expansions of the System Definition Document
for PRIM Release 2

The following section in the SDD was expanded for Release 2:

3.2 Component Data Files

The following were revised or deleted from the overall document:

Reflect new ODP organization on front page

3.1.3 3rd para reflect new ODP organization

5th para 0800-1800 to 0700-2000

7th para reword paragraph

8th para add 'number of concurrent' to first sentence

3.1.7 2nd para remove reference to second release

3rd para remove references to MAINID and SFN data lists

4th para change reference to reflect all 63 COMVAD dictionaries in Release 1

5th para remove reference that CEMLOC will be made part of HRS2 'in 1983'

6th para change reference of CAPER to IAPS

3.3.6 change reference to a query statement executing in 3 minutes to 1 2/3 minutes.

3.3.7 1st para, 2nd sentence add 'be used to'

2nd para, 2nd sentence add reference to PRCHGLOAD, PRIM PERSIGN and PRIMSEP

Add 3rd sentence

3.4.3 3rd para, 2nd sentence add 'concurrent'

3.4.6 change reference of 3 minutes to 1 2/3 minutes (100 seconds)

ATTACHMENTS - Figure 4 revised

PRIM TEAM

U N C L A S S I F I E D

Personnel Resource Information Management
(PRIM)

System Definition Document
(SDD-C20-1B)

by

PRIM Project Team

ODP/MISG/ISD
OP/ID/ADRB

28 June 1984

U N C L A S S I F I E D

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Chapter 1

INTRODUCTION

1.1 PURPOSE

The purpose of the System Definition Document (SDD) is to graphically illustrate the PRIM System and its data flow. This SDD defines the system by identifying its major functional components (entities) and allocating the system requirements, from the Detailed System Requirements Document, to each identified entity. The SDD provides the framework for the PRIM design which will be presented in the Preliminary System Design Specifications (PSDS).

1.2 SCOPE

Although the PRIM System will be designed in a phased approach, this SDD will define graphically the total system hierarchy, its functional components, interrelationships, and external system interfaces. This SDD consists of three Chapters:

Chapter 1 - 'Introduction' presents the purpose and scope of the PRIM System Definition Document and all references applicable to the contents of the System Definition Document.

Chapter 2 - 'System Definition' presents a general description of the system, the system objectives, system interfaces and system data flow.

Chapter 3 - 'Functional Component Definitions' presents the definition of the system in terms of its functional components. This chapter also defines component objectives, functional, performance, security, hardware, human engineering, and interface characteristics. In addition, this chapter graphically depicts the functional component in terms of inputs, processes, outputs and interfaces.

1.3 REFERENCES

The PRIM Project Team is utilizing a number of documents, publications and other reference material in writing the PRIM System Definition Document. They are listed in Table 1 below.

TABLE 1

Documents, Publications and Reference Material

1. ODP Applications Documentation Standards
2. FIPS PUBS 38, U. S. Dept. of Commerce (NBS), 15 Feb 1976, 'Guidelines for Documentation of Computer Programs and Automated Data Systems'
3. DeMarco, Tom, 'Structured Analysis and System Specification', (Prentice-Hall Software Series), 1979 by Yourdon Inc.
4. Metzger, Philip W., 'Managing a Programming Project', 1973 by Prentice-Hall, Inc.
5. PRIM System Development Plan
6. PRIM Detailed System Requirements Document

Chapter 2

SYSTEM DEFINITION

2.1 SYSTEM DESCRIPTION

The PRIM System will provide a centralized data base for decentralized query by the Personnel Officer, Career Management Officer, Office Director, or Training Officer of a component in direct support of the component's day-to-day personnel management activities. The PRIM System will also assist the components in planning and projecting personnel assignments and Career Management activities by providing files for a component's use. Components will have the capability to enter, update (add, change, delete) and retrieve component data from these files.

To accomplish these two major functions, the PRIM Data Base will have two distinctly different sets of files. The first set of files (centralized data files) will centralize official data from the Human Resources System (HRS2 Data Base) and the second set of files (component data files) will be used as component work files.

The PRIM centralized data files will receive data via extracts and loads from the HRS2 Data Base. Data loaded into the PRIM Data Base from the HRS2 Data Base cannot be updated by the components and can only be changed by another extract from the HRS2 Data Base.

The PRIM component data files will be used by the components to project personnel assignments, perform career management activities, or perform other tasks unique to their component. Unlike the centralized data files described above, these component data files can be added to, deleted from, and changed by the components.

The PRIM System will give the components the capability to create reports from the PRIM Data Base using data from either the centralized data files and/or their own component data files. Components will be able to produce reports online, offline, or graphically. Office of Personnel reports from the HRS2 Data Base will, however, continue to be the official reporting mechanism for components reporting to the Directorate-Level.

The term component in the context of this Section is defined as a separate entity in the Agency's organizational structure be it a directorate level, an office, a staff, a division, a service, or a center.

PRIM component data access will be controlled through a security matrix which will protect data from unauthorized access. Components will use the PRIM centralized data files for decentralized query of all people assigned to that component or having that component's career service designation. All queries made to official data files or read and/or write accesses to component data files will be conducted through a security matrix which will restrict a user to predetermined records, items, and/or files.

Figure 1.1 and Figure 1.2 of the Appendix illustrates the four (4) major functional components of the PRIM System. See the following sections for detailed definitions of the major functional components.

1. Centralizing Official Data for Component Access (Personnel Data Files) (Section 3.1) Releases 1, 3, and 5.
2. Component Data Files (Section 3.2) Releases 2 and 4
3. Controlled Component Data Access (Section 3.3)
4. Data Retrieval by Components (Section 3.4)

2.2 SYSTEM OBJECTIVES

The four major objectives of PRIM are to provide:

- o a means whereby components can access selected official data currently resident on the HRS2 Data Base,
- o working files for component use in planning and projecting personnel assignments,
- o a security matrix to restrict a component to only data prespecified for that component's access.
- o a component with the capability to create reports with data stored in both the centralized data files and the component's data files.

2.3 SYSTEM INTERFACES

The PRIM System will interface with the Human Resources System (HRS2 Data Base) of the Office of Personnel. Data will be transferred from the HRS2 Data Base and loaded into the PRIM centralized data files on a pre-arranged schedule. This data cannot be updated by components and can only be changed via another extract from the HRS2 Data Base. The data exchanged will include classes such as: employee, organizational/position, and validation. Figure 2 of the Appendix graphically depicts the HRS2 Interface and the classes of data exchanged.

2.4 SYSTEM DATA FLOW

Figure 3 of the Appendix graphically depicts the system-level data flow.

Chapter 3

FUNCTIONAL COMPONENT DEFINITIONS

This chapter will describe the functional, performance, security, hardware, human engineering, and interface characteristics for each of the functional components of the PRIM System. This chapter will also restate the objective and provide a graphic illustration of each functional component.

3.1 CENTRALIZING OFFICIAL DATA FOR COMPONENT ACCESS

3.1.1 Component Objectives

The PRIM System will provide a centralized data base for Agency components to retrieve official data (organizational, position and employee data) currently resident in the Human Resources System (HRS2 Data Base). This is a major requirement of PRIM because the HRS2 Data Base is not available for Agency components to access.

3.1.2 Functional Characteristics

Components have a constant need to reference data in the HRS2 Data Base. The HRS2 Data Base has limited access in order to protect the integrity and performance of the official data stored in the HRS2 Data Base. By transferring this data from the HRS2 Data Base into the PRIM Data Base, the components will have an accurate up-to-date source for official data. The data moved from HRS2 will be identical in PRIM and will be changed only by another data move from HRS2.

Reporting capabilities will be established to allow component reporting from the centralized data files. (See Data Retrieval by Components)

The term components in the context of this section is defined as a separate entity in the Agency's organizational structure be it a Directorate-Level, an office, a staff, a division, a service, or a center.

Security restrictions will limit a component to queries and reports on only data which pertains to that component. (See Controlled Component Data Access)

3.1.3 Performance Characteristics

The PRIM System will be designed to provide up-to-date official data (organizational, position and employee) for queries and reports generated by components. PRIM will receive this data from HRS2 on a pre-arranged schedule. Changes to these PRIM files will only be made as a result of another extract and load from HRS2 to PRIM. This controlled movement of data will guarantee that the data made available to the components in the PRIM centralized data files is identical to the data in the corresponding official HRS2 data files.

The DBMS must support queries and reports requesting data from up to 30 different user data files utilizing a minimum of 70 edit/validation dictionaries.

The initial timing requirement for transferring data to the PRIM Data Base will be scheduled to coincide with the update process of data in the HRS2 Data Base. The extract of HRS2 data for updating the PRIM System must occur after the complete nightly update of the HRS2 Data Base. This operation will be performed by the DBCC/IMD/ODP

The centralized data files of the PRIM Data Base must be in sync with the corresponding files in the HRS2 Data Base at the beginning of each business day. To guarantee this data base file balance, a report will be produced daily for the PRIM Data Base Manager which will give the number of records moved, the number of records loaded, the sending file, and the receiving file.

The PRIM System will be available for all components during normal hours (Monday through Friday from 0700-2000 hours) and other than normal hours by advanced request. A degraded mode should only affect response time and should not last for more than one day.

Under a normal working mode, 95% of the direct queries against the consolidated data files will complete in 4 seconds and a complex query (end-to-end search) will complete at the rate of 2000 records per minute.

The PRIM System will provide consistent responses for queries as long as the data and/or the software has not been changed by an update.

The estimated number of concurrent users for the PRIM Data Base could be as high as 200. The estimated user for the first release will be very low (4-10 components). Subsequent components will be granted access based on ODP and PERS available resources. Components will be asked to have a limited number of designated people who will

actually access the data, e.g., Personnel Officer, Career Management Officer, or Training Officer.

Software errors will be given immediate attention. Software enhancements will be documented to guarantee ease in future maintenance. The PRIM System will be designed to allow future expansion with little affect to the maintainability of the software.

3.1.4 Security Characteristics

Security in the PRIM Data Base will control the read access to centralized data files, to records within these files, and to specific data elements within the records. Security controls will restrict a component to query and report on organizational, position, and employee data in their respective components or data which has been passed electronically. The security controls will also prevent anyone from entering new data, deleting data, or changing data values of the HRS2 data stored in the PRIM centralized data files. Components will be asked to have a limited number of designated people who will actually access the data, e.g., Personnel Officer, Career Management Officer, or Training Officer.

Different levels of data will be required by different components. The Directorate-Level will require retrieval access to records of employees assigned to all offices under the Directorate or who have a Grandfather Career Service Designation associated with the Directorate. However, a component will require access to the records of employees who have the service designation of that office, or who are assigned to that office. Security may be imposed on specific attributes within a file. Only designated personnel such as those responsible for preparing applicant and promotion data for Uniform Selection Review Reports can have access to race code.

The PRIM software identified as the latest production release will be completely isolated from all development activity. There will be stringent control procedures established for updating the PRIM production software. The version of the PRIM software accepted by the user will be the version baselined as operational.

All of the Data Base Management System software related to controlling read access to the PRIM System and to data in the centralized data files is highly sensitive and will be limited to only the individuals needing the information.

The PRIM System will provide daily reports to the PRIM DBM listing violations of established read and/or write access control to the PRIM System.

All acceptance testing and production activity performed outside of our Headquarters building must utilize only equipment approved for classified use.

3.1.5 Hardware Characteristics

The volume of data and the number of concurrent users accessing the PRIM System requires a main frame computer. Peripherals in common use include video terminals (Delta Data 5000 or 7260 series) printers (TI Silent 700, Design 100). The PRIM System will utilize these devices as long as it is efficient.

The PRIM centralized data files will be accessed by components through existing equipment. Components will be responsible for acquiring any additional equipment needed to access the PRIM system. Any equipment, specifically terminals or printers, currently installed or newly acquired by the components, must comply with standard Agency computer security regulations.

3.1.6 Human Engineering Characteristics

The PRIM System will be designed to be used by non-technical professionals and support personnel. Therefore, PRIM will be simple to use and provide guidance by responding with clear, concise and understandable messages.

The PRIM System will be designed to facilitate data retrieval from the centralized data files by components utilizing the techniques of menus or prompts.

The PRIM software in development/maintenance must be carefully controlled and documented so all personnel involved are totally aware of the status. All PRIM software will be thoroughly tested using an Acceptance Test Plan and will be accepted by the user before it is moved to the Production System.

3.1.7 Interface Characteristics

An interface is required with the HRS2 Data Base where the source data currently resides or where it will reside when it is due in the PRIM Data Base. An HRS2/PRIM interface will be the only means of updating the PRIM centralized data files.

Currently, extract and load will be the mechanism used for this interface. However, if a new mechanism is made available in a future GIM release, the interface mechanism will be reconsidered. The PRIM Data Base will be built and provided to the customer in five (5) releases. The first, third, and fifth releases will expand the size of the interface between HRS2 and PRIM as described below:

The first release of PRIM will make available to the components the most frequently requested HRS2 data (employee, organizational, and position, and HRS2 data needed for query). These data lists are NAME, PERSIGN, QUAL(Active), HPOSNR, LREQID, ORGCODE, POSNR, and STRENGTH.

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The first release of the PRIM System requires data values from 63 HRS2 COMVAD dictionaries. These dictionaries are needed for data validations and text retrieval when querying and reporting from the PRIM Data Base.

The third release of PRIM will include seven additional HRS projects and supporting dictionaries in the HRS2/PRIM interface. These projects are: CEMLOC, CIARDS, CTP, PERFIT, PERSEAS, CENQUAL (QUACOM), and TRAIN. CEMLOC is scheduled to be made part of the HRS2 Data Base.

The fifth release of PRIM is IAPS, Integrated Applicant Processing System (presently CAPER), a system planned for incorporation into development in the HRS2 Data Base. If IAPS is added to the HRS2 Data Base, it will also be included in the PRIM System as Release 5 and will be included in the HRS2/PRIM interface schedule. If IAPS is not made a part of the HRS2 Data Base, there are no plans to incorporate it into PRIM.

It is important that a good communication link be established between the data base managers and the Primary Applications Specialists (PAS) for the HRS2 Data Base and the PRIM Data Base. This link will guarantee that dictionary changes made to data lists in the HRS2 Data Base and affected by the HRS2/PRIM interface are simultaneously incorporated in the PRIM Data Base.

3.1.8 Component Description

Figure 4 of the Appendix graphically depicts the interface between the HRS2 Data Base and the PRIM System to centralize official data for component use.

3.2 COMPONENT DATA FILES

3.2.1 Component Objectives

Another major objective required in the PRIM System is to provide component data files for components to enter, update, and retrieve their own component data.

The term component data refers to any data not transferred into the PRIM System from an external system thereby, requiring data entry by the components of their own data.

3.2.2 Functional Characteristics

The Component data files will be used by the Components as work files for planning and projecting personnel assignments, Career Management activities, and Directorate-Level reporting. These files will also have some reserved fields that can be used by individual components for their specific needs.

The Component Files are to be a mirror like image of the Official file fields (PERSIGN, POSNR, ORGCODE) moved to the component file area. Based on the selection criteria for that particular component, data lists would be created of PERSIGN, POSNR, and ORGCODE with new fields (from Release 2 questionnaire) and reserve fields. The components must have the add, change, and delete capability to key information into these fields if they wish the data to be different from the official record. When the component adds a potential reassignment-in record to the component file, a check must be made to ensure the SSN is in the components's SEGACCESS segment. If it is not then the losing component must transfer the record to the gaining component which would permit access to the record. If it is a potential new EOD, a check of SEGACCESS and PERSIGN would indicate no official record of the SSN and then the component could add the SSN. A flag would be generated on a field that is being changed by the component. Over the weekend the linking procedure would be initiated and the official files would be made current. The fields in the official and the component files would then be compared. If the fields are different and the component fields have no flag, the component fields would be changed to equal the official fields. If the fields are equal and the component fields have a flag, the flag would be deleted. If the fields are different, and the component fields have a flag, the component fields are not changed.

A compare of the active SEGACCESS segment to the component SEGACCESS segment would either add new SSNs (EODs) or delete SSNs (separations which moved from PRIM PERSIGN to PRIMSEP). These records respectively would be added to or deleted from the component PERSIGN file. This compare would also apply to POSNR and ORGCODE.

The components need a user-friendly method of updating their component files such as general purpose update menus which allow the users to simply enter the changes desired to their record fields.

A menu will be designed to enable the components to establish edits and validations for their reserve fields. This menu would permit the components to use the same fields created for the component files but establish unique edits and validations, e.g. length of field, rename the fields, alpha/numeric, for their specific fields and store them in a file with a unique name using their signon org. There should be a tie-in of their signon org to this file for retrieval purposes. Upon updating their component files, the update menus must

| call in this specific edit/validation file unique to the component and
| use in conjunction with the input menu.

| A skeletal manning table menu will be designed to produce a basic
| manning table sorted by orgcode, position sequence number similar to
| the current Staffing Complement produced by the Office of Personnel.
| Menus are needed to simplify the capability to add or change the
| fields that print out on the manning table. The purpose of creating a
| component manning table is to pull both official and component data
| together to produce a management tool for planning purposes.

Components must have access to data on employees who have been
nominated for assignment to their component. When an employee has
been nominated for reassignment consideration to another component,
the losing component must be able to electronically provide requested
employee data from the PRIM System to the gaining component. A re-
quest for this data must be initiated by the gaining component and is
limited to the data available in the PRIM System. The requested data
will be basic employee data as is normally found in a Biographic Pro-
file Report.

| This paragraph deleted.

The reporting capabilities established for the centralized data
files will also be available for components to report from their work
files. (See Data Retrieval by Components)

Security restrictions will limit a component to queries and re-
ports from only it's component work file. (See Controlled Component
Data Access)

3.2.3 Performance Characteristics

The Component data files will be for the express use of the Components
to perform data manipulation when planning and projecting personnel
assignments, and later in Release 4 for a Career Management package.
Unlike the centralized data files, the data files can be added to, de-
leted from, and changed by the components.

| The PRIM System will be available for all components during nor-
| mal hours (Monday through Friday from 0700-2000 hours) and other than
| normal hours by advanced request. A degraded mode should only affect
| response time and should not last for more than one day. Response
| time for 95% of the direct queries should be 4 seconds and a complex
| query (end-to-end search) at the rate of 2000 records per minute.

The PRIM System will provide consistent responses for queries and
updates as long as the data and/or the software has not been changed
by an update. The estimated concurrent users for the PRIM Data Base
could be as high as 200 when all releases have been completed. Compo-

nent data files will not be available in Release 1; edit and validation of component data files, built-in flexibility, and update response level will be defined in the detailed requirements for Release 2 of the PRIM System.

The official files that are duplicated in the component files will retain the same edits and validations that the official files have. New fields created for the component files will have specific edits and validations, e.g. new date fields created in component files will be input in the same manner and stored the same as a date field in the official files. The reserve fields will have specific length edits.

Components will be responsible for the updating of their component files via menus. By using these menus, this will result in a direct update to their files. Menus developed for Release 2 must provide the flexibility of changing fields that are printed on the manning table report. Reserve fields will be created to provide flexibility in allowing components to store their own unique personnel data.

The DBMS must support queries and reports requesting data from up to 30 different user data files utilizing a minimum of 70 edit/validation dictionaries.

A daily backup with audit trails of all updates to data and software will be done automatically for the PRIM System. One daily backup per week will be stored in a location other than the primary use area and one daily backup per month will be stored at an off-site location.

The capability will exist to restore the PRIM System as of the close of business the previous day, and also reprocess activity for the current day. This restore/reprocess procedure will take less than 2 hours and will be done by the DBCC/IMD/ODP at the request of the PRIM Data Base Manager.

After a temporary system halt which does not require a complete restart of the system or reinitiation of a signon, any active computer process which was interrupted will be restarted without user intervention.

3.2.4 Security Characteristics

In Release 2 the Data Base Manager will create a new SYSMAN2 entry which will provide the update capability to only those individuals identified by the component. A limited number of designated users, determined by the component managers, will be given the capability to add, change, and delete data in the component files.

The capability to update must be controlled separately from the capability to retrieve component data. Likewise, the capability to

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retrieve each type of component data, i.e., future personnel assignments, Career Management data, and Directorate-Level data must be controlled separately. Each component manager must identify each capability required for each system user, and notify the PRIM Data Base Manager. The Data Base Manager should also be notified of any changes in access requirements.

Components will be asked to have a limited number of designated people who require read and/or write access to the PRIM Data Base, e.g., Personnel Officer, Career Management Officer, or Training Officer.

Other U.S. Government employees responsible for the Administrative control of Joint National Programs require read and/or write access to the PRIM Data Base. (TBR)

All Acceptance Testing and Production activity performed outside of the Headquarters building will utilize only equipment approved for classified use. This is required because the data used from Acceptance Testing onward is classified information. The PRIM component data files will not be affected by changes to the main frame computer, and new online equipment must be compatible to the existing online equipment.

The secure operation of the PRIM System requires that specific software controls be placed on all users. The controls are needed to assist in the protection of sensitive data stored in the PRIM Data Base from unauthorized disclosure, modification or destruction. Use of the PRIM System from remote terminals must be controlled by an authorized identifier (USERID) and then authenticated with a classified password.

The PRIM software in development/maintenance must be carefully controlled and documented so all personnel involved are totally aware of the status. All PRIM software will be thoroughly tested using an Acceptance Test Plan and will be accepted by the user before it is moved to the Production System.

All of the Data Base Management System software related to controlling read/write access to the PRIM System and to data in the component data files is highly sensitive and must be limited to only the individuals needing the information.

3.2.5 Hardware Characteristics

The volume of data and the number of concurrent users accessing the PRIM System requires a main frame computer. Peripherals in common use include video terminals (Delta Data 5000 or 7260 series) printers (TI Silent 700, Design 100). The PRIM System must utilize these devices as long as it is efficient.

The PRIM component data files will be accessed by the individual components through existing equipment. The components will be responsible for acquiring any additional equipment needed to access the PRIM System. Any equipment, specifically terminals or printers, currently installed or newly acquired by the components, must comply with standard Agency computer security regulations.

3.2.6 Human Engineering Characteristics

The PRIM component data files (work files) will be designed to be used by non-technical professionals and support personnel. Therefore, PRIM will be simple to use and provide guidance by responding with clear, concise and understandable messages.

The PRIM component data files must be designed to facilitate data entry and data retrieval by components utilizing the techniques of menus or prompts. The PRIM software identified as the latest production release will be completely isolated from all development activity. There will be stringent control procedures established for updating the PRIM production software. The version of the PRIM software accepted by the user will be the version baselined as operational.

3.2.7 Interface Characteristics

| The interface with the HRS2 Data Base will also include some validation dictionaries to be used to validate data input into prespecified attributes of the component data files. Validation of reserved fields will be the responsibility of the individual components via the edits and validations established in Release 2.

3.2.8 Component Description

Figure 5 of the Appendix graphically depicts the component data files in the PRIM Data Base and how they will be used by the components.

3.3 CONTROLLED COMPONENT DATA ACCESS

3.3.1 Component Objectives

One of the major functions of the PRIM System is to provide a means of restricting components to only that data which pertains to that component.

3.3.2 Functional Characteristics

The PRIM Data Base has a requirement for a special security matrix system which will control the read and/or write access to files, to records within these files, and to specific data elements within the records. Standard security provided with a GIMS data base can provide the security needed on a particular attribute or to a particular file. Standard GIMS security, however, cannot selectively restrict a user to only specific records in a file. Components will be asked to have a limited number of designated people who will actually access the data, e.g., Personnel Officer, Career Management Officer, or Training Officer.

Contractors will not have read/write access to classified data either in development or production.

The major security requirement is to control the read/write access of a component so they can only

1. query and report on organizational, position and employee data,
2. enter, update, and retrieve component data,
3. access only the records for individuals assigned to that component, or have the Career Service Designation of that component, and
4. access data passed electronically between components for individuals with an upcoming assignment to that component.

The Directorate-Level requires query and report access to official position data, as well as data for employees assigned to every office within that Directorate or who have a Grandfather Career Service Designation associated with that Directorate.

Other U.S. Government employees responsible for the Administrative control of Joint National Programs require read and/or write access to the PRIM Data Base.

Security controls must restrict other U.S. Government employees to only

- o query and report on organizational, position and employee data, and
- o enter, update, and retrieve component data for only those individuals assigned to a specific Joint National Program (TBR)

There must be limited read access to an employee's race code. Only designated personnel such as those responsible for preparing applicant and promotion data for Uniform Selection Review Reports can have read access to this code.

3.3.3 Performance Characteristics

The security requirements placed on the PRIM System require that all data access be through a controlled mode. Software controls will be placed on all users to assist in the protection of sensitive data stored in the PRIM component work files for unauthorized disclosure, modification or destruction. Through this controlled mode, a strict security check can be imposed to restrict a component's retrieval (extract or query) to only data prespecified for that component.

The security controls must prevent anyone from adding, deleting, or changing official data stored in the PRIM Data Base.

Update and retrieval capabilities of component data must be available to the component users. The capability to update must be controlled separately from the capability to retrieve component data. Likewise, the capability to retrieve each type of component data, i.e., future personnel assignments, Career Management data, and Directorate-Level data must be controlled separately. Each component manager must identify each capability required for each system user, and notify the PRIM Data Base Manager. Further security restrictions can be established by components on work files to specific individuals for specific tasks (retrieval, input, delete, change, extract).

The PRIM System will be designed so no one can inadvertently affect the established access of other PRIM users, the established organization of the PRIM Data Base, or the values stored in the PRIM Data Base.

3.3.4 Security Characteristics

Request for access to the PRIM Data Base can only be initiated by preauthorized persons in each component through the PRIM Data Base Manager. The security matrix will be monitored and updated by the data base manager. The secure operation of the PRIM System requires that specific software controls be placed on all users. The controls are needed to assist in the protection of sensitive data stored in the PRIM Data Base from unauthorized disclosure, modification or destruction. Access to the PRIM System from remote terminals will be controlled by an authorized identifier (USERID) and then authenticated with a classified password.

A daily report will be provided to the PRIM Data Base Manager identifying any violations of established access control to the PRIM System. This report will be similar to a report produced on the HRS2 Data Base. The report will identify persons who are forced off the PRIM System after three (3) security code violations. The report will list:

1. Data Base Name,
2. User Identification,

3. Terminal Identification,
4. Date and Time of violation,
5. If appropriate,
 - a) Data List Name,
 - b) Transaction Number, and
 - c) Verb Name.

The PRIM software identified as the latest production release must be completely isolated from all development activity. There must be stringent control procedures established for updating the PRIM production software. The version of the PRIM software accepted by the User must be the version baselined as operational.

The PRIM software in development/maintenance must be carefully controlled and documented so all personnel involved are totally aware of the status. All PRIM software must be thoroughly tested using an Acceptance Test Plan and must be accepted by the User before it is moved to the Production System.

All of the Data Base Management System software related to controlling read and/or write access to the PRIM System and to data in the PRIM System is highly sensitive and must be limited to only the individuals needing the information.

3.3.5 Hardware Characteristics

The PRIM System will be accessed by the individual components through existing equipment. Peripherals in common use include video terminals (Delta Data 5000 or 7260 series) printers (TI Silent 700, Design 100). The components will be responsible for acquiring any additional equipment needed to access the PRIM System. Any equipment, specifically terminals or printers, currently installed or newly acquired by the components, must comply with standard Agency computer security regulations.

All Acceptance Testing and Production activity performed outside of the Headquarters building must utilize only equipment approved for classified use.

3.3.6 Human Engineering Characteristics

The PRIM System will be designed to be used by non-technical professionals and support personnel. Therefore, PRIM will be simple to use and provide guidance by responding with clear, concise and understandable messages. Access to the PRIM Data Base as viewed by the User must not exceed two verification processes requiring a correct response by the User.

The PRIM System must be designed to facilitate data entry and data retrieval by components utilizing the techniques of menus or prompts. A periodic Data Base Exception Report will be produced to identify query statements executing longer than 1 2/3 minutes (100 seconds). The report will be used by the Data Base Manager to focus on component areas that may need guidance on creating cost effective queries. The report will include the following data:

- o data base name,
- o data list name,
- o user identification,
- o terminal identification,
- o user organization,
- o date and time of exception,
- o transaction number, and
- o verb executing.

3.3.7 Interface Characteristics

An interface is required with the HRS2 Data Base to acquire data from PERSIGN's INTERFACE Data List. The INTERFACE Data List contains data which will be used to update the PRIM security matrix used by components to retrieve data from the PRIM Data Base.

An extract will be used to pull the necessary data from the PERSIGN INTERFACE Data List resident on the HRS2 Data Base. The PRCHGLOAD procedure will then scan the PERSIGN's INTERFACE data for SSN changes, 'ZZ', 'RE', and 'SD' actions or any action changing Service Designation or ORG CODE and make the necessary updates to PRIM PERSIGN or PRIMSEP. The 'ZZ' action will be identified by the procedure, but handled manually by the PRIM Data Base Manager.

3.3.8 Component Description

Figure 6 of the Appendix will illustrate the level of security validations required for access to the PRIM System.

3.4 DATA RETRIEVAL BY COMPONENTS

3.4.1 Component Objectives

The PRIM System will provide the capability for components to generate their own online queries or reports, offline reports, or graphs utilizing official as well as component data.

3.4.2 Functional Characteristics

PRIM will allow components the flexibility of producing their own queries, reports, and graphs. The official Office of Personnel reports produced from the HRS2 Data Base are produced on a predetermined schedule and are produced for all components. Components will be allowed to use the organizational, position, employee, or component data as well as data utilized for edit/validation functions within the PRIM Data Base for reporting purposes. These outputs represent working tools used by the Personnel Officer, Career Management Officer, Office Director, and the Training Officer of a component. Components plan to use the PRIM System reporting capabilities in their day-to-day management. Office of Personnel reports will continue to be the official reporting mechanism for components reporting to Directorate-Level.

Some of the output reporting requirements will be for:

- Component generated online queries
- Component generated offline reports
- Component generated basic graphics capabilities
- Career Management Reports
- Data Base Reports for Statistics, Exceptions, and Security
- Data Dictionary Reporting

The component online query requirements from PRIM are varied and will include such items as:

1. List the Position, Schedule, and Grade of an employee to insure the proposed assignment conforms to Office of Personnel mandated Assignment Controls.
2. Count Positions of a selected Occupational Series.
3. Counts of LWOP Cases and NTE Dates.
4. List date of last change to a position.
5. Count of vacant positions.
6. List the date a position was officially deleted.
7. List daily strength for:

- o part-time
 - o full-time
 - o Dev Comp
 - o LWOP
 - o Details in/out
 - o Sick Leave (approved for disability retirement)
8. List the Service Designation of a position versus the incumbent.
 9. List the Subcategory Code of a position.
 10. List selected Cover Items.
 11. List FLSA Designation of Employee.
 12. List projected WGI to ascertain whether to hold a promotion until the WGI is granted.

The component's offline report requirements will utilize the reportwriter capability of GIMS as well as the RAMIS reportwriter available through the RAMGIM procedure. Examples of the offline reports needed from PRIM are:

1. Directorate-Level Statistics

To produce reports such as a Branch's production activities or analytical resource expenditures for a given period of time.

2. Component Level Reports

To produce reports of a component's active employees with a duty tour of part-time, sorted alphabetically by last name, with the employee's type of duty tour and number of hours scheduled to be worked, and

To produce a report of a component's active staff employees, sorted by station location, and sorted alphabetically by employee's last name, and

3. Career Management Reporting

To produce reports such as a listing of employees with a particular schedule and grade level, with a specific career service designation, assigned to a particular area, and sorted by date of grade.

RAMIS Graphics will also be used through the RAMGIM procedure to produce very simple graphs utilizing 2 dimensions (x,y axes). Graphs can be produced using histogram, bar, and point-plots.

An example of a typical graph is a Competitive Evaluation Profile. This graph lists the evaluation criteria on one axis, the point values on the other axis. All evaluated employees are identified to a particular peer group. Each peer group is represented by a graph showing the total counts for that group of how people were rated and printed at the appropriate intersection of the x and y axes.

Standard Career Management Reports to be used Agency-wide will be produced in the PRIM Data Base. These reports, however, will not be created until PRIM Release 4. This requirement will be defined in detail in Release 4 design phase.

3.4.3 Performance Characteristics

Reports produced from the PRIM Data Base by component will be used as working tools by the component's Personnel Officer, Career Management Officer, Office Director, and Training Officer. Components will have the capability of creating reports using the data they are authorized to access. Under normal operating conditions, a report produced through the PRIM System should complete in 2 hours with a maximum overnight turnaround. Data from the PRIM Data Base can be displayed on a CRT terminal, thermal paper, computer paper, or cut paper.

The PRIM Data Base must be in sync with the HRS2 Data Base at the beginning of business each day for each data list loaded to the PRIM System. A daily data base statistical report is required for the PRIM Data Base Manager. This report should be similar to the current GIMS II Data Base Statistics Report for the HRS2 Data Base. This report should be alphabetized by the PRIM Data List name and will include at a minimum the number of items in each Data List on the PRIM Data Base.

The PRIM System will provide consistent responses for queries and extracts as long as the data and/or the software has not been changed by an update. The PRIM Data Base is estimated to have 200 concurrent users when all releases are available. The DBMS must support queries and reports requesting data from up to 30 different user data files utilizing a minimum of 70 edit/validation dictionaries. All of these files will not be needed in Release 1.

Under a normal working mode, 95% of the direct queries against the consolidated data files will complete in 4 seconds and a complex query (end-to-end search) will complete at the rate of 2000 records per minute.

Software errors will be given immediate attention. Software enhancements will be documented to guarantee ease in future maintenance. The PRIM System will be designed to allow future expansion with little affect on the maintainability of the software.

The PRIM System must provide report writer software for the user to produce their own output in report or graphic format, as well as,

the capability to portray data on a CRT terminal, on computer paper, or on cut paper.

3.4.4 Security Characteristics

Security controls will restrict a component to report on organizational, position, and employee data which has been predefined for their access from the centralized data files or from it's own component work file.

All components will be required to use Agency standard control/classification labels for all online and offline reports, i.e., UNCLASSIFIED, CONFIDENTIAL, SECRET, TOP SECRET.

Components will be asked to have a limited number of designated people who require read and/or write access to the PRIM Data Base, e.g., Personnel Officer, Career Management Officer, or Training Officer. Contractors must not have read/write access to classified data either in development or production.

Security controls must restrict other U.S. Government employees to only

- o query and report on organizational, position and employee data, and
- o enter, update, and retrieve component data

for only those individuals assigned to a specific Joint National Program. (TBR)

There must be limited read access to an employee's race code. Only designated personnel such as those responsible for preparing applicant and promotion data for Uniform Selection Review Reports can have read access to this code.

Update and retrieval capabilities of component data must be available to the component users. The capability to update must be controlled separately from the capability to retrieve component data. Likewise, the capability to retrieve each type of component data, i.e., future personnel assignments, Career Management data, and Directorate-Level data must be controlled separately. Each component manager must identify each capability required for each system user, and notify the PRIM Data Base Manager.

Security controls must restrict a component to

1. query and report on organizational, position and employee data,
2. retrieve only it's component data,

3. access only the records for individuals assigned to that component, or have the Career Service Designation of that component,
4. access data passed electronically between components for individuals with an upcoming assignment to that component.

The Directorate-Level requires read access to the HRS2 data for organizational, position, and employee data for every office within the Directorate, or who have a Grandfather Career Service Designation associated with that Directorate.

Retrieval capabilities of component data must be available to the component users. The capability to retrieve each type of component data, and Directorate-Level data must be controlled separately. Each component manager must identify each capability required for each system user, and notify the PRIM Data Base Manager.

A standard report will be sent to the ACF2 Control Officer showing ACF2 violations by persons attempting to illegally access a data set.

The PRIM System must provide daily reports to the PRIM Data Base Manager identifying any violations of established read and/or write access control to the PRIM System. The violations of established access control report should be similar to the HRS2 Data Base report. It should be provided daily and identify who has been forced off the PRIM System after 3 security code violations. The report should list at a minimum:

1. Data Base Name,
2. User Identification,
3. Terminal Identification,
4. Date and Time of violation,
5. If appropriate,
 - a) Data List Name,
 - b) Transaction Number, and
 - c) Verb Name.

3.4.5 Hardware Characteristics

The PRIM System will be accessed by the individual components through existing equipment. Peripherals in common use for producing reports include video terminals (Delta Data 5000 or 7260 series) printers (TI Silent 700, Design 100, High Speed), and graphics devices (the 4000 series of Tektronics Graphics terminal and the 6200A, RAMTEK Terminal/Color Graphics). Any equipment, specifically terminals or printers, currently installed or newly acquired by the components, must comply with standard Agency computer security regulations.

3.4.6 Human Engineering Characteristics

The PRIM System will be designed to be used by non-technical professionals and support personnel. Therefore, PRIM will be simple to use and provide guidance by responding with clear, concise and understandable messages.

The procedure to query the PRIM data online or produce hardcopy reports must be easy to comprehend, and utilize an English-like language similar to the RAMIS Report Writer Language.

The procedures to print a PRIM report offline will be predefined and will utilize prompting techniques to obtain data needed to print the desired report. The output will be properly identified to show user and office code.

A daily Data Base Exception Report will be produced to identify query statements executing longer than 1 2/3 minutes (100 seconds). The report will be used by the Data Base Manager to focus on component areas that may need guidance on creating cost effective queries. The report should include the following data:

- o data base name,
- o data list name,
- o user identification,
- o terminal identification,
- o user organization,
- o date and time of exception,
- o transaction number, and
- o verb executing.

3.4.7 Interface Characteristics

There are no data base interface requirements needed to satisfy this section.

3.4.8 Component Description

Figure 7 of the Appendix illustrates the retrieval capabilities available to components in PRIM.

OC-

MEMORANDUM FOR: PRIM Project Manager, ODP/MSG/ISD/IDB

FROM:

Chief, Applications and Project Group, OC

SUBJECT: Revision to the Detailed System Requirements Document for PRIM.

REFERENCE: Detailed System Requirements Document, DSR-C20-1B, dated 21 June 1984.

1. Upon reviewing ref document, it was noted that the TEMPEST section did not provide enough guidelines as to what type of equipment should be used in Headquarters and at Agency leased buildings. To ensure emanations security requirements are met, and that only equipment approved for classified processing is used, it is requested that the following changes be made to referenced document;

3.3.6.3 TEMPEST

3.3.6.3.1 Equipment used outside the Headquarters building in the PRIM system must meet the requirements of NACSIM 5100A.

3.3.6.3.2 Equipment located in the Headquarters building must be National Security Agency (NSA) zone 3 equipment listed in "Tempest Zone Assignments for Information Processing Equipment." (C)

2. For additional information and a listing of approved equipment, please contact [redacted] on secure extension [redacted]

*TS6
will send memo*

WARNING NOTICE
INTELLIGENCE SOURCES
OR METHODS INVOLVED

CONFIDENTIAL

From

OC-CSD/TSG

3.3.6.3 TEMPEST

3.3.6.3.1

outside the HDS Bldg

Equipment used in the PRIM system

must meet the requirements of

NACSIM 5100A. Equipment located

in the Headquarter building must

BE NSA ZONE 3 EQUIPMENT ^{LISTED} in "TEMPEST ZONE REQUIREMENTS FOR INFORMATION PROCESSING EQUIPMENT"

~~must all zone 3 criteria as determined by NACSI 5004~~

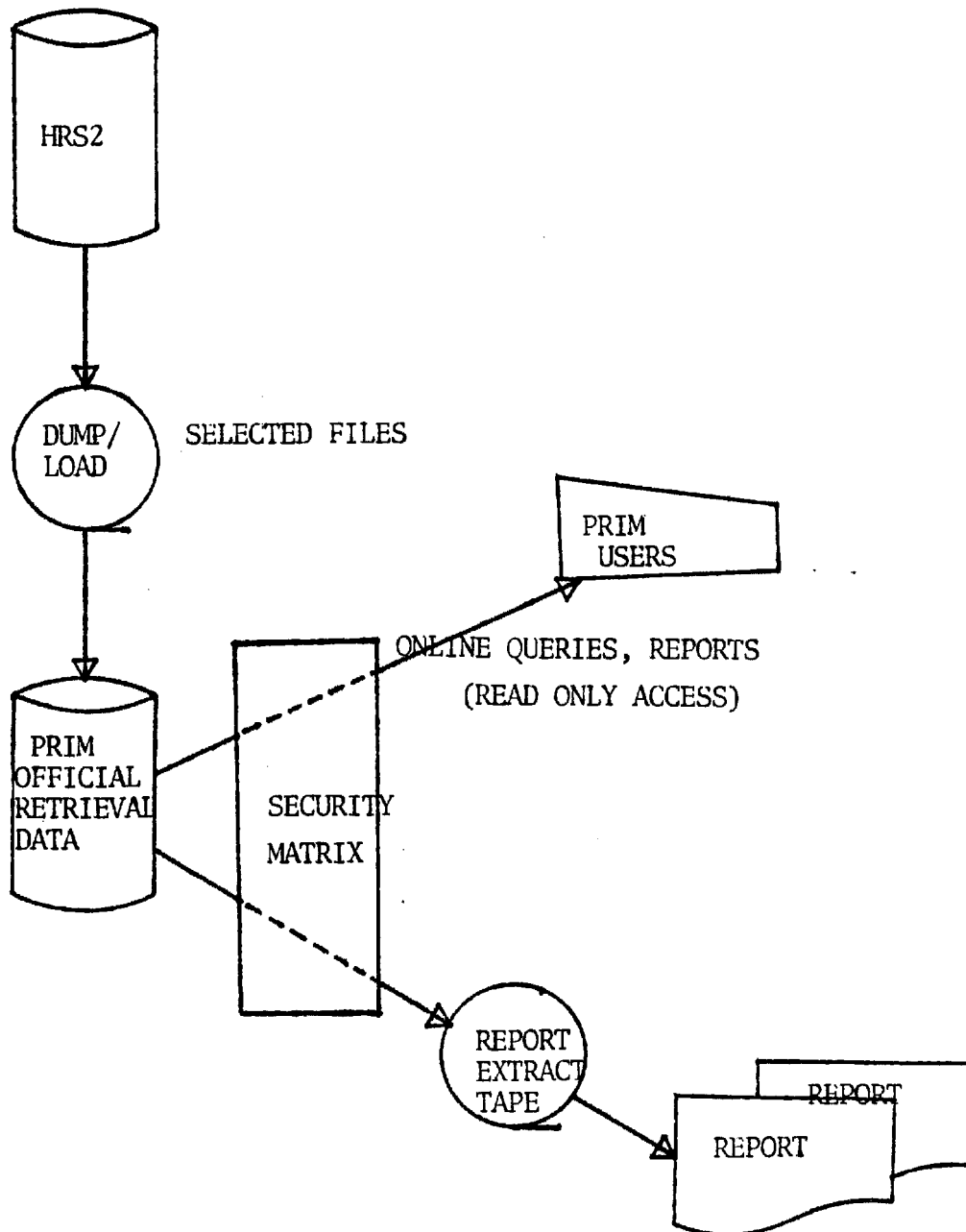
Zone 3 → 500' - doesn't meet NACSIM 5100A
or 10m ≥ 20db

Chapter 4

APPENDIX

Figure 4

CENTRALIZING OFFICIAL DATA FOR COMPONENT ACCESS



See m. _____

Please follow through
with PRIM group to
make sure they get info
attached re TEMPEST.

Thank



STATINTL